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99-57

May 21, 1999

Mr. Dale Hatfield
Chief – Office of Engineering and Technology
Federal Communications Commission
The Portals
445 12th Street, SW.
Washington, DC 20554

Re: Final Service Outage Report

Dear Mr. Hatfield:

In accordance with the requirements in CC Docket 91-273, enclosed is the Final Service Disruption Report for the Bell Atlantic service outage affecting Belle Harbor and Far Rockaway in New York City, New York, which occurred on April 21, 1999.

Please call me if you have any questions about this report or other service outage issues.

Sincerely,

Mary Liz Hepburn

Enclosure

cc: R. Kimball

BELL ATLANTIC – NEW YORK
FCC NETWORK DISRUPTION
FINAL SERVICE DISRUPTION REPORT

This Final Service Disruption Report is filed by Bell Atlantic on behalf of its telephone operating company, Bell Atlantic-New York (BA-NY), in accordance with Section 63.100 of the Commission's Rules in the Second Report and Order in CC Docket 91-273, 9 FCC Rcd 3911 (1994), as revised by the Order on Reconsideration, released October 30, 1995, 10 FCC Rcd 11764 (1995). Bell Atlantic filed an Initial Report on April 21, 1999 notifying the Commission of an outage that occurred on that day affecting Belle Harbor and Far Rockaway in New York City, New York.

On Wednesday April 21, 1999 at 11:22 AM, the Brooklyn Network Operations Center (NOC) received numerous alarms indicating multiple T4X failures. An analysis of the data determined that six T4Xs with a total of 56 DS-3s had failed, isolating the Belle Harbor Central Office (CO) from the CCS7 network. The affected facilities are between the Albemarle Rd. Central Office in Brooklyn and the Far Rockaway and Belle Harbor COs in the borough of Queens.

With the assistance of Technical Support, the NOC and CO technicians started to restore service by patching the T4Xs. The first system was patched by 2:30 PM and four additional systems were patched by 4:00 PM. CCS7 call processing to the Belle Harbor CO resumed at 2:55 PM. The last T4X was patched at 6:15 PM, restoring full service.

While restoration efforts were in progress, Construction personnel located the point of damage when they sighted a boring truck close to the estimated location of the failure. Wet cement and evidence of drilling were found and at 5:00 PM, when a subsurface contractor for Bell Atlantic exposed the damage ducts, the facility cut was confirmed.

Date of Incident:

Wednesday, April 21, 1999

Time of Incident:

11:22 AM

Duration of Outage:

6 Hours, 52 Minutes

Geographic Area Affected:

Southern Queens, New York City, New York

Estimated Number of Customers Affected:

This outage affected approximately 109,000 customers.

Type of Services Affected:

This outage affected switched interLATA and intraLATA calls, 800 services Special Access/Private Line services and 911 Emergency Services. Intraswitch calls would have completed

Estimated Number of Blocked Calls:

Bell Atlantic estimates there were approximately 190,000 blocked calls as a result of this failure.

Cause of the Incident, Including Name and Type of Equipment Involved and Specific Part(s) of the Network Affected:

Root Cause Analysis:

Direct Cause: Digging by an outside contractor was the direct cause of this disruption.

Affected Element: Six T4Xs consisting of 56 T3s failed.

Outage Cause: The severing of a fiber optic cable caused this outage.

Duration Cause:

- Discrepancies in the Trunk Inventory and Record Keeping System (TIRKS) documentation contributed to the duration of this outage. If the TIRKS documentation had been accurate, the single point of failure would have been more apparent, allowing personnel to be dispatched to the correct CO where patching of the failed systems could have begun earlier.
- The contractor failed to notify Bell Atlantic of the break and its location. In addition, the bored hole location had been covered with fresh cement, making it more difficult to locate the failure.

Root Cause Finding:

Drilling was conducted without proper notification to the "One-Call Center" to verify underground facilities at an unmarked location.

Methods Used to Restore Service:

The 56 T3s were patched beginning at 2:30 PM with the last system being restored at 6:15 PM. A new fiber was placed and five of the six T4Xs were moved back onto the replaced fiber by 1:00 AM on April 22, 1999. For diversity, one T4X system will remain on the cable to which it was patched.

Current or Proposed Company Practices Related to this Outage:

Bell Atlantic promotes the "Call Before You Dig" program and responds to requests to locate our cable.

Network Reliability Council "Best Practices" That Relate To This Incident:

The following "Best Practice" recommended by the FCC's Network Reliability Council's publication, June 1993, *A Report to the Nation*, applies to this outage: Section A, Paragraph 6.1.1, Best practice to prevent fiber cable damage caused by digging.

Describe How The NRC Recommendation(s) Could Have Prevented This Outage:

Proper notification by the boring contractor would have prompted Bell Atlantic to locate and mark the cable routes in the area of the digging.

Steps Taken to Prevent Recurrence:

- A review of the TIRKS database to correct any inaccuracies in the affected systems and the routing diversity of the protection systems will be conducted.
- Diversification of the CCS7 links will be reviewed and corrected.
- A recommendation will be made to Engineering and Implementation to include SONET Inter-Office-Facilities between the affected Central Offices. Self-healing ring technology will greatly reduce the chance of a similar outage occurring.